CSE3020 - Product Definition and Validation

PROJECT REPORT ON
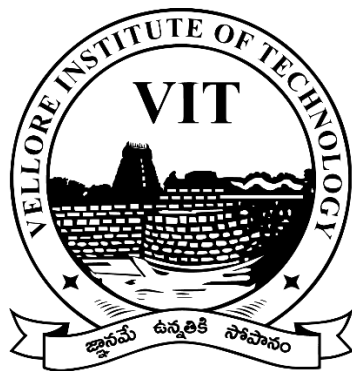
BillBook - Billing Pattern made simple!

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INTRODUCTION

1.1 Introduction:

The main objective of this project is to make Billing management much easier for Business Enterprises. In this project, we have developed a **"Web-based Billing Software (BILLBOOK)"** which is an application to automate the process of billing and managing a departmental store, which would be responsive by using HTML, CSS, Bootstrap, and JavaScript as front-end tools and the background is managed by a database (MySQL), PHP, phpMyAdmin.

This project includes several modules such as the register/login module, the admin module, bill management module, report generation & giveaway module. This software allows company owners to set up online bill management system, consumers to read bills, and owners to save or download invoices for new businesses. It is developed on a network of department stores around the country. It also assists clients in creating, updating, and calculating bills/invoices without to manually listing them.

Also, this application leads to a secure reliable, error-free, and fast management system for maintaining bills/invoices or computing whole bill computations. This also maintains computerized records of data and this data can be stored for a certain period and provides summary reports to owners monthly or weekly & yearly with easy accessing.

1.2 Literature survey

i. Problem Definition:

This project is an application to automate the process of billing and managing a Departmental store.

ii. Understand the Root Causes:

Existing systems include a lot of paperwork and require a lot of manual labor; this may be remedied by automating the process with a web-based GUI.

iii. Identify the Stakeholder and Users:

Stakeholders - admin, developers, target audience, funders, clients.

Users - Businessmen, Enterprises, Shopkeepers, Vendors, Govt., officers.

iv. Identifying the constraints to be imposed on the solution:

a. Customers without Internet Access.

b. Information Privacy.

c. not cost-effective for small scale business owners.

1.3 Problem introduction

Difficult to maintain bills and manage huge data manually. Reports are difficult to generate from existing data. Full or a lot of paperwork and Time consuming. Inability of modification of data.

Objective:

The main objective of this project is to generate and manage invoices in a matter of few seconds in order to avoid a lot of paperwork and Time-consuming process by managing huge data manually. This project benefits owners of enterprises as well as customers. This software allows to maintain all the products with their shorthand notation by providing summary reports to the owner, which gives a convenient solution to the billing pattern with a Secured User Authentication and Validation. And also user Giveaway generator whenever offers or discounts are available.

Scope:

a. The application is made to keep track of data from a wide range of businesses.
b. Order confirmation invoices to customer's devices.
c. Provides an easy billing pattern solution.
d. Bill/Invoice creation is instantaneous.
e. On a regular basis, generates report summaries for the owners.
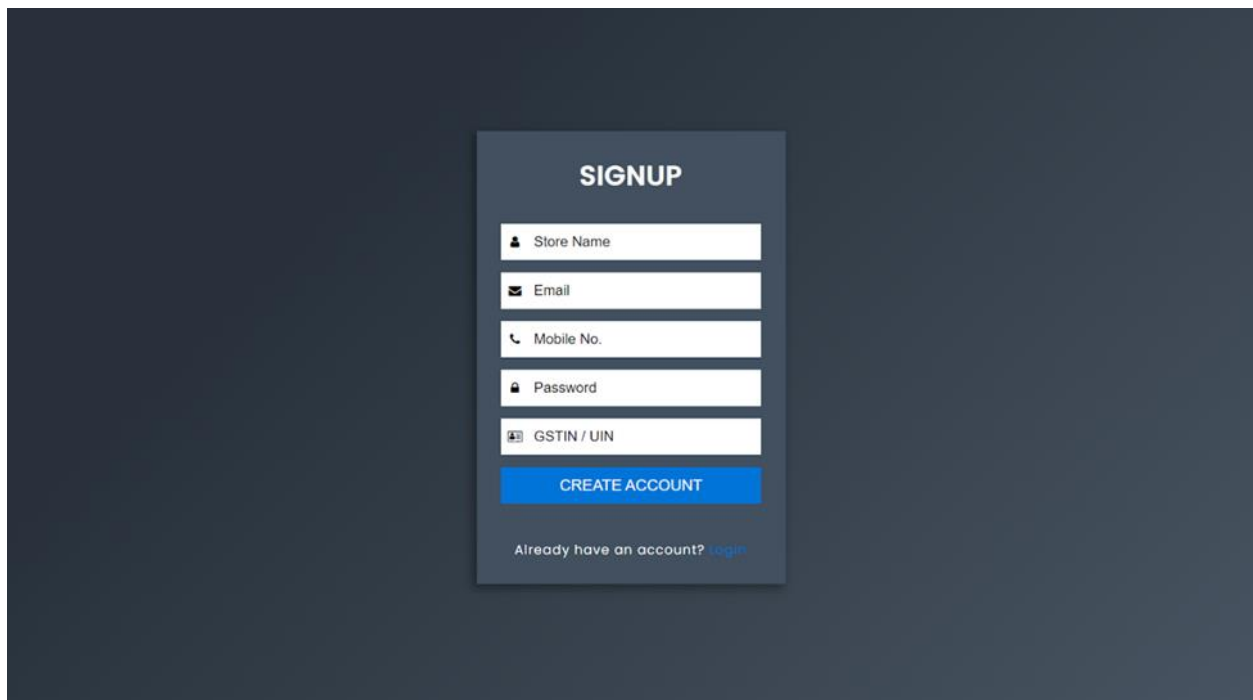**f.** At times, a user-giveaway feature will be planned with a bill / invoice generation.

1.4 Modules in the project

1.Account creation module (Sign in, Sign up)

2. Bill Generation module (Create, Read, Update, Save)

3. Report Generation module (Print, Download)

4. Bill Calculation Module (Math, computation)

5. Admin module (Managing user modules)

6. Product Shorthand notation module

7. Random giveaway generator module
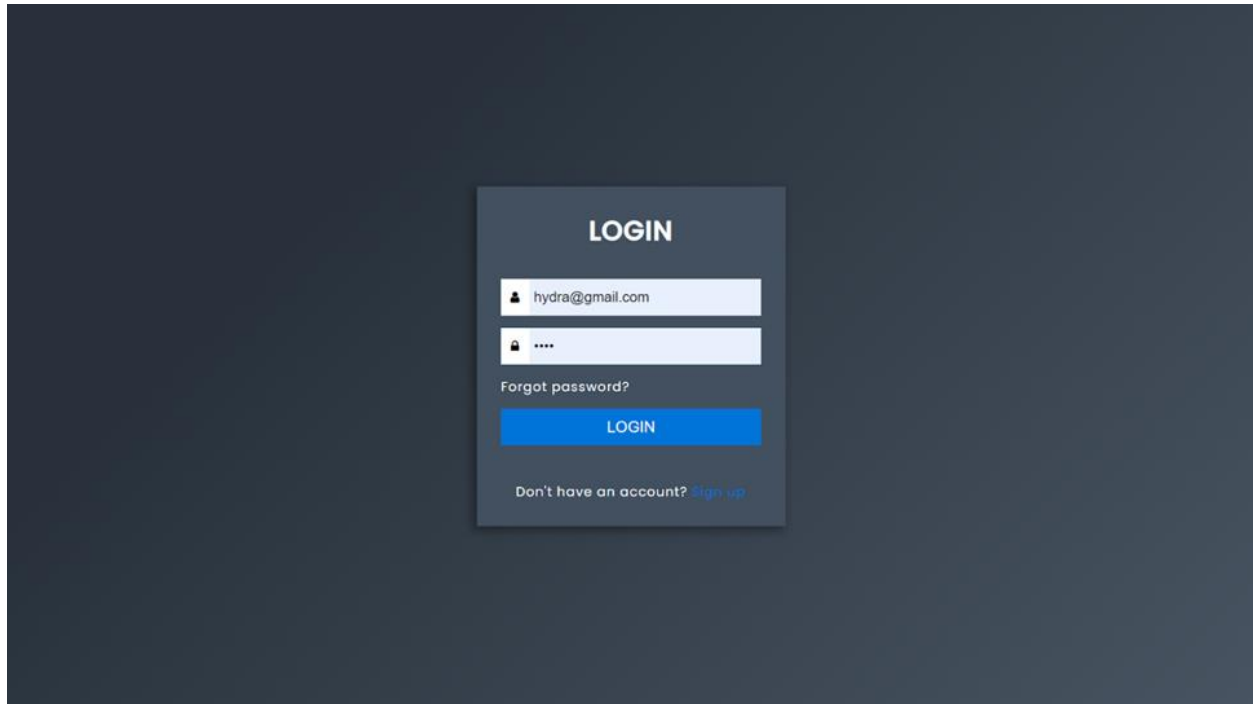
8. Logout module (Session Delete)

1.5 Test cases

Functionalities	If working yes	If not working no
Admin Login	Yes	-
User Login	Yes	-
Bill Generations	Yes	-
Managing Bills	Yes	-
Bill Calculations	Yes	-
Product Shorthand	Yes	-
Giveaway Generator	Yes	-

SIGN UP PAGE

LOGIN PAGE

HOME PAGE

BILL GENERATION

CREATE BILL

Bill no.	164		Mode	UPI

Name	OLIV Store		Address	VITAP Campus
Mobile No.	7846301229		Email	oliv@gmail.com

Code | Item | Quantity | Price

Add

ID	Item Name	Quantity	Price	Amount
1	SILK	5	100	500
2	A70	3	29000	87000
3	PB	2	1000	2000
				Total: RS 89500

From Date	To Date	Click to Filter
01/11/2021	15/11/2021	Submit

Id	Bill Id	Mode	Customer Name	Customer Mobile	Quantity	Total Cost
1	150	UPI	Shivaji	6768221479	2	340
2	160	Cash	Sai	7676767676	2	40
3	164	UPI	OLIV Store	7846301229	5	500
4	163	UPI	Nikki	8309908635	2	58000
5	151	UPI	Prasad	8787878787	2	40
6	157	Cash	Gudi	9398589364	5	500
7	156	Cash	Raju	9785463211	4	80
8	154	Cash	Seshank	9898989898	2	40

Print Download

BILL REPORT

PRODUCT SHORTHAND

GIVEWAY GENERATOR

ADMIN LOGIN

TESTING:

1. Testing Login Page, the user credentials are properly validated. Expected output is matched with actual output.

2. When a user credentials and actual credentials don't match, handling the error and displaying with proper error message.
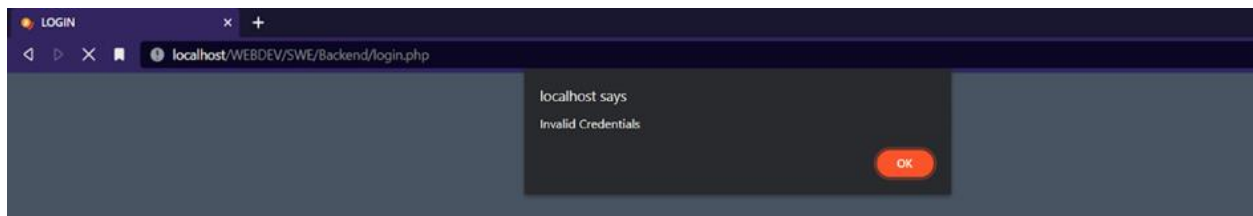
3. When empty product details are added to the product list, It is not being handled properly. Expected output is not matching with actual output.

ID	Code	Item Name	Price
1	SILK	Dairy Milk Silk	100
2	DTLS	Dettol Sanitizer	35
3	BTRS	Cello Batteries	15
4	NCS	Nachos	30
5	PKRFT	Paperkraft A4 Bundle	300
6	SFT	Soft Touch Napkins	170
7	WSTN	Wild Stone Body Spray	210
8	AMZ	Amazon Spice Jars	215
9	CBG	IKEA Carry Bags	70
10	PEN	Cello Pen	5
11	TB	TextBook	200
12	LAP	LAPTOP	250000
13	KRK	Kurkure	20
14			0

4. Billing for an empty product detail. It is not being handled properly. Expected output is not matching with actual output.

5. The list of random user records that is generated for no. of records is accurate. Expected output matches with actual output.

6.The list of random user records that is generated for no. of records entered is not validated. Expected output is not matching with actual output.

7. A working modal (popup) for Manage bills - Edit button. Expected Output matches with actual output.

REQUIREMENTS SPECIFICATION

2.1 Hardware requirements

Intel Core i5 3rd Gen processor (i5 3450 3.1 GHz) or above (Depends on the number of clients)
RAM: 2GB or above
OS: Windows 7 (all editions) or Windows 8 or Windows 10

2.2Software requirements

HTML5, CSS3, JavaScript, Bootstrap, PHP, MySQL ,phpMyAdmin ,Lucid chart ,Heroku or Infintityfree, Visual Studio, Code, Chrome.

ANALYSIS

3.1 Existing System

a. Difficult to maintain bills and manage huge data manually.

b. Reports are difficult to generate from existing data.

c. Full or a lot of paperwork and Time consuming.

d. Inability of modification of data.

3.2 Proposed System

a. Easiness in maintaining and modification of sold products.
b. Reports are simple to implement, create, generate within no time.
c. No or very few paperwork.

3.3 Feasibility study

a. Technical Feasibility:

S. No	Tools /Technology needed	Description and uses	Type
1.	HTML5	Appearance of website	Front-end Software
2.	CSS3	Adding style and presentation to the webpages	Front-end Software
3.	JavaScript	Adding interactive user behavior to web pages	Front-end Software
4.	Bootstrap	front-end framework used for UI	Front-end Software
5.	PHP	Server-side programming and interactive with phpMyAdmin	Back-end Software
6.	MySQL	For the purpose of a web database and logging application	Database Software
7.	phpMyAdmin	Management of databases, tables, indexes, permissions	Database Software
8.	Lucid chart	a web-based proprietary platform to collaborate on drawing charts and diagrams	Design Tool Software
9.	Heroku or Infintityfree	a container-based cloud Platform as a Service to deploy, manage, scale apps	Cloud Platform Software
10.	Visual Studio Code	a code editor redefined, optimized for building, debugging web apps	Desktop Software
11.	Chrome	a cross-platform web browser	Software
12.	Windows 10	an operating system for building apps	OS
13.	PC / Laptop	Intel based processor-run computer system, which have keyboard and mouse as input devices.	Hardware

b. Behavioural Feasibility:
An assessment of end-user behavior that may have an impact on the system's Encirclement.
People are naturally reluctant to change, and computers must be cognizant of this in order to
support changes. Since the proposed system's sole purpose is to meet information demands,
no employees would lose their jobs as a result of it. Because it supports the organization and its
strategic objective, this software solution is also possible for enterprises.

c. Economic Feasibility:

Type	Quantity	Figures
Human Power	5 to 6 members	$25 - $30 per day per head
Software	-	$40 - $50 approx.
Hardware	3 or 4 sets	$80 - $100 approx.

Total estimated budget - $4000 - $4500

DESIGN

4.1 Software architecture diagram

PRESENTATION TIER

HTML, CSS (Bootstrap), JavaScript

BUSINESS TIER

PHP classes & calculation

DATA TIER

phpMyAdmin, MySQL

XAMPP SERVER

(DATA)
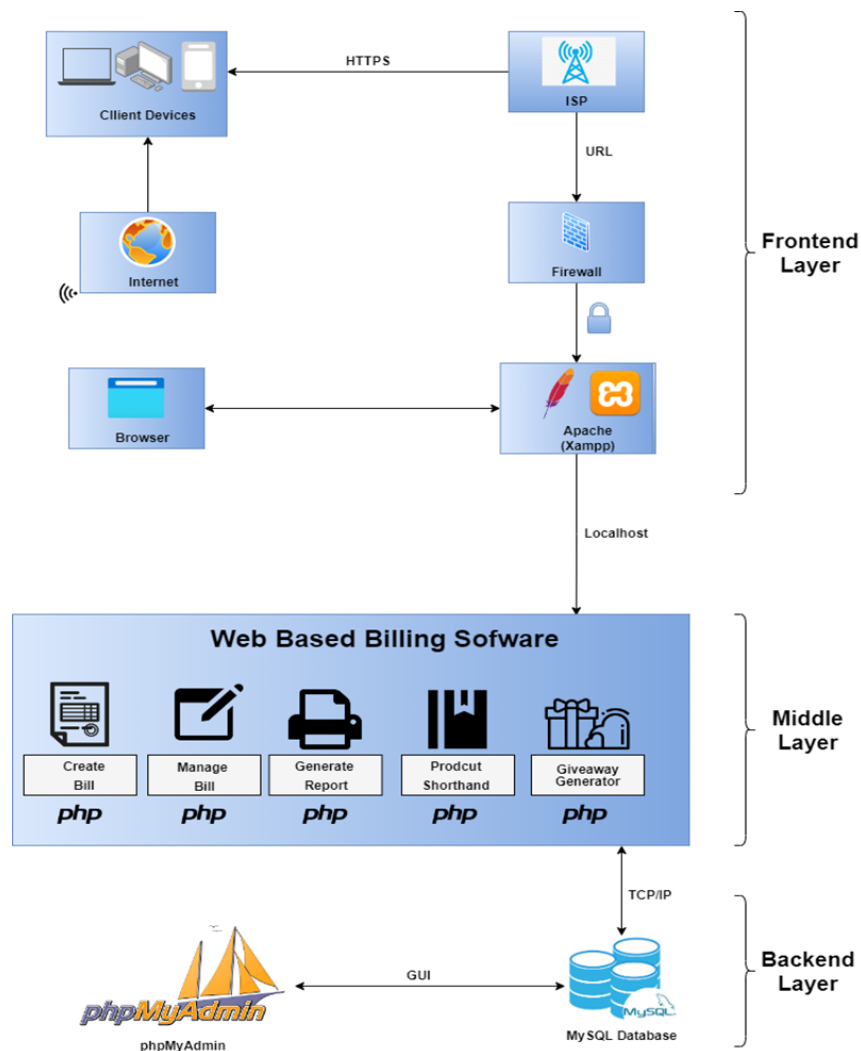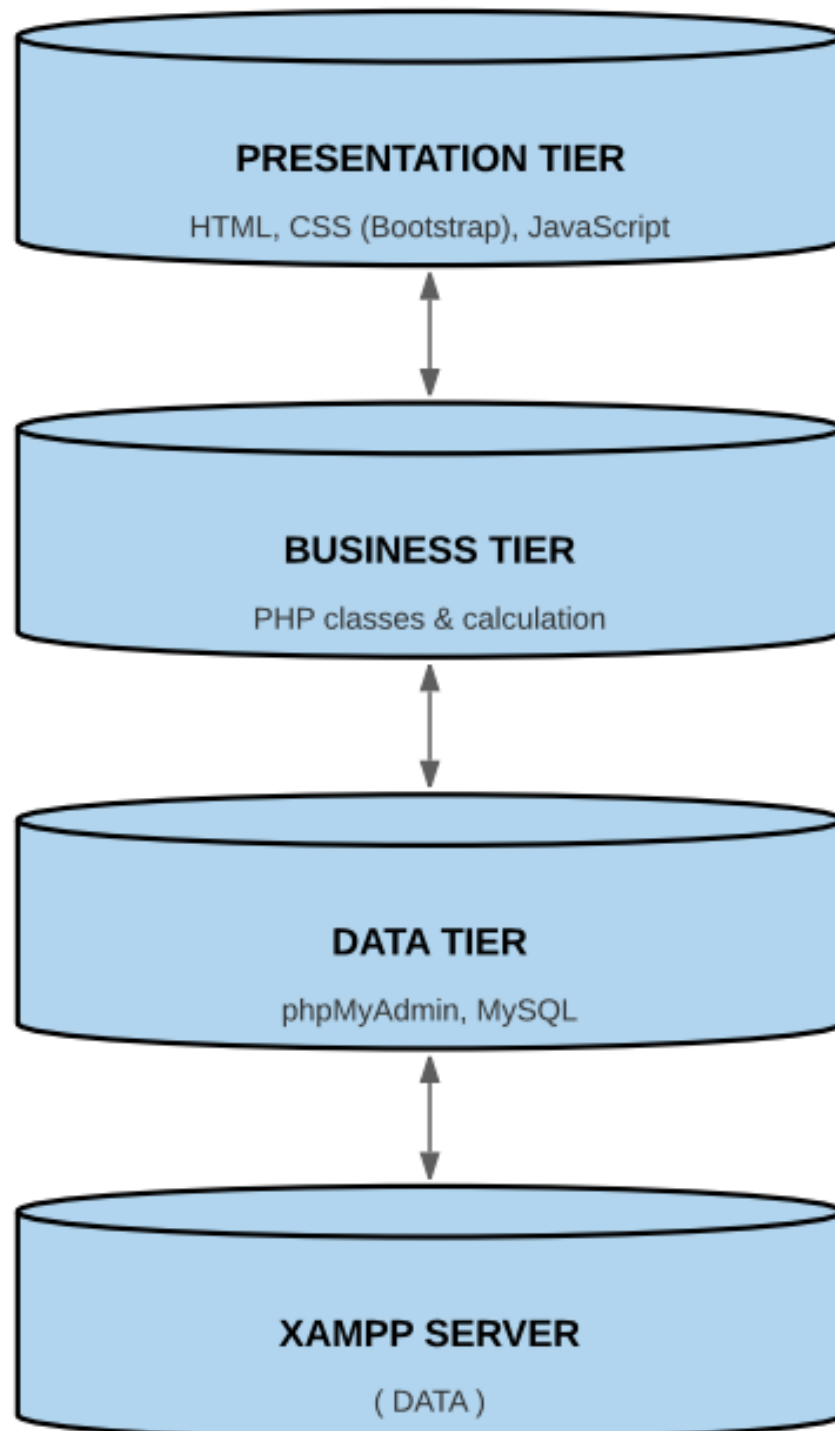
3 Tier Architecture diagram

4.1.1 UML Diagrams

USE-CASE DIAGRAM

USE CASE DIAGRAM

ACTIVITY DIAGRAM

Activity Diagram

CLASS DIAGRAM

CREATE BILL

+bill_id: int
+bill_mode: string
+user_name: string
+user_email : string
+user_address: string
+user_mobile: string

+newbill()
+addbill()
+savebill()

MANAGE BILL

+bill_id: int
+bill_mode: string
+product_code: string
+product_name: string
+product_quantity: string
+product_price: int

+editbill()
+updatebill()
+deletebill()
+savebill()

PRODUCT SHORTHAND

+product_id: int
+product_code: string
+product_name: string
+product_price: int

+addrecord()
+viewrecord()

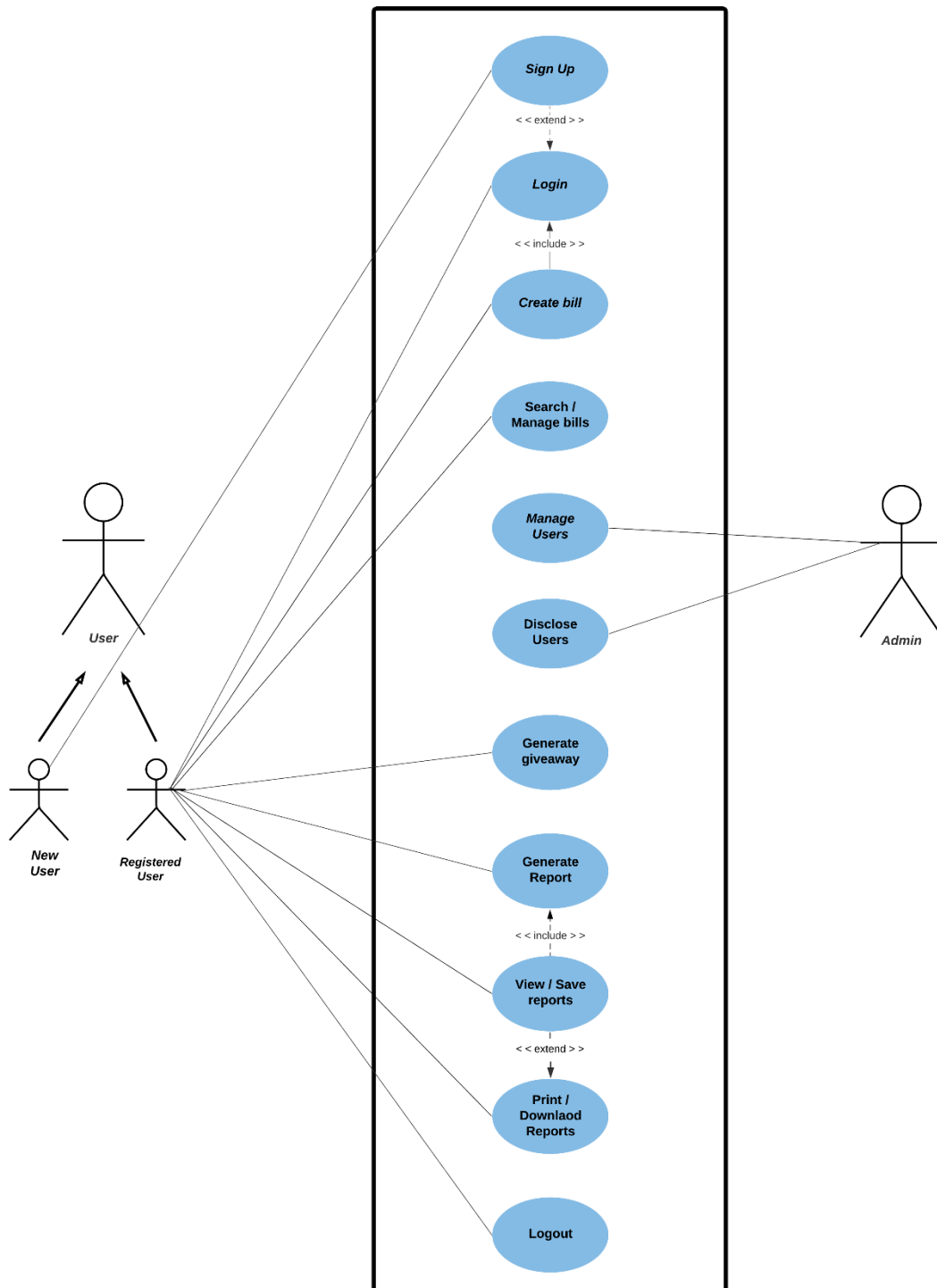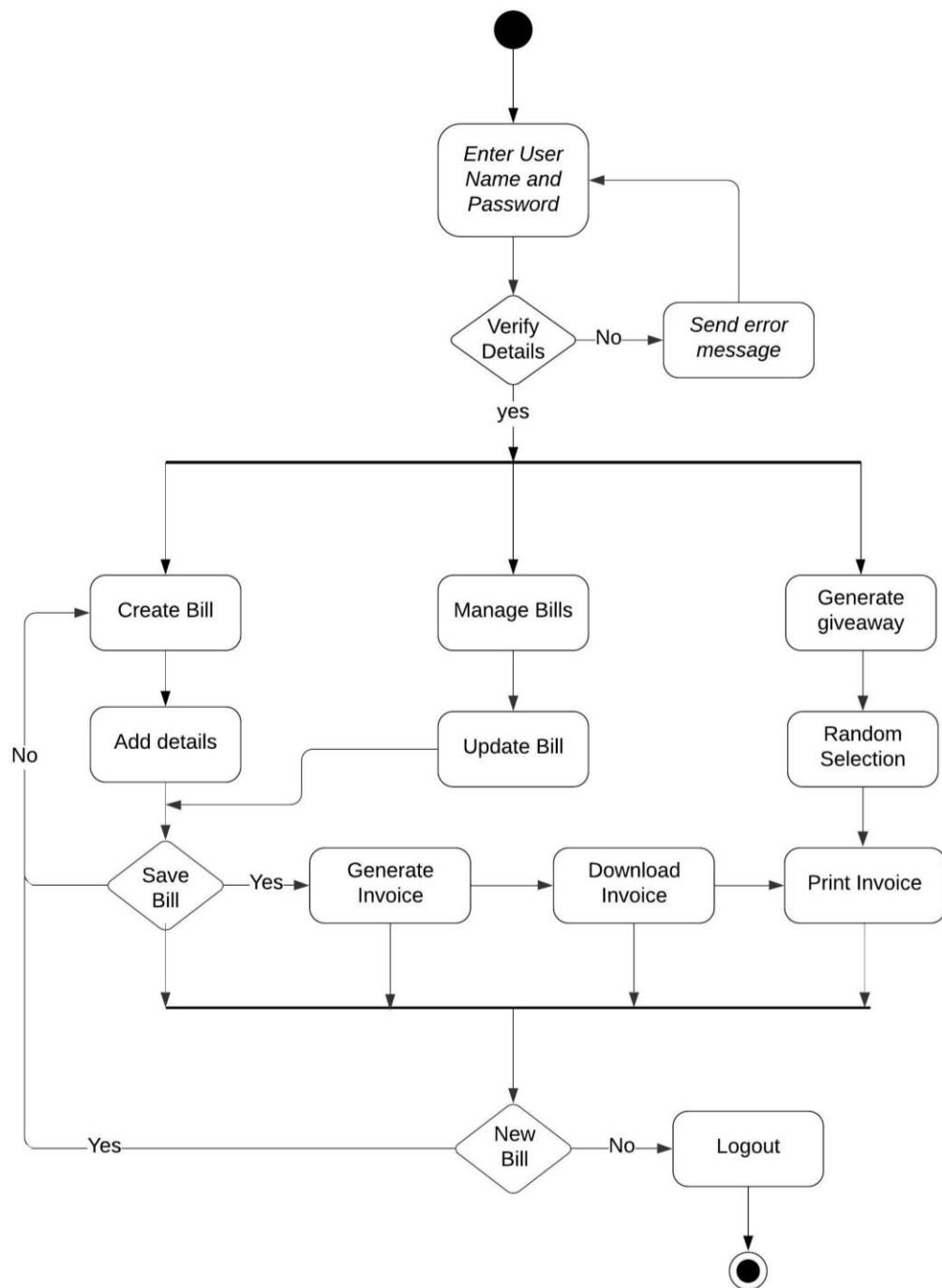**CUSTOMER**

+user_email : string
#user_password: string

+login()
+signup()
+checkcredentials()
+createnewuser()

REGISTERED USER

+user_id: int
+user_mobile: string
+user_name: string
+user_address: string
+user_gstin: string
+user_email : string
#user_password: string

+createbill()
+managebill()
+generatereport()
+productshorthand()
+giveaway()

PRODUCT BILLS

+product_code: string
+product_name: string
+product_quantity: string
+product_price: int

+productshorthand()
+addbill()
+createbill()

NEW USER

+user_id: int
+user_mobile: string
+user_name: string
+user_address: string
+user_gstin: string
+user_email : string
#user_password: string

+addaccount()
+login()
+signup()
+verifydetails()

GENERATE REPORT

+report_description: string
+report_number: string
+report_fromdate: date
+report_todate: date

+ printReport()
+filterReport()
+downloadReport()

GIVEAWAY GENERATOR

+id: int
+user_id: int
+user_name: string
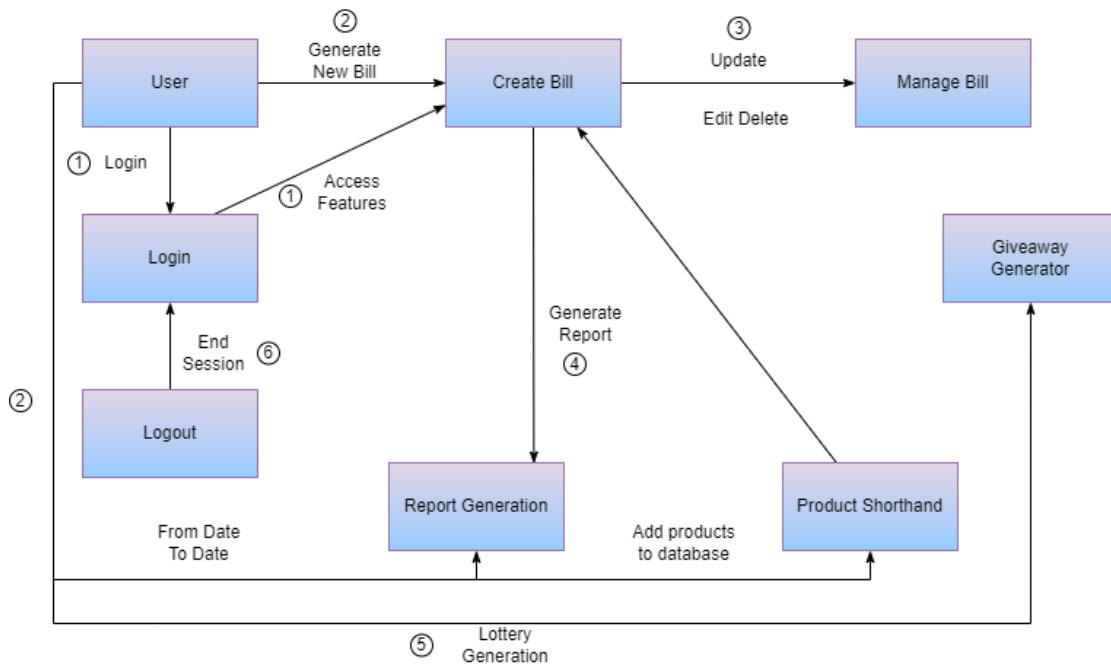+user_mobile: string
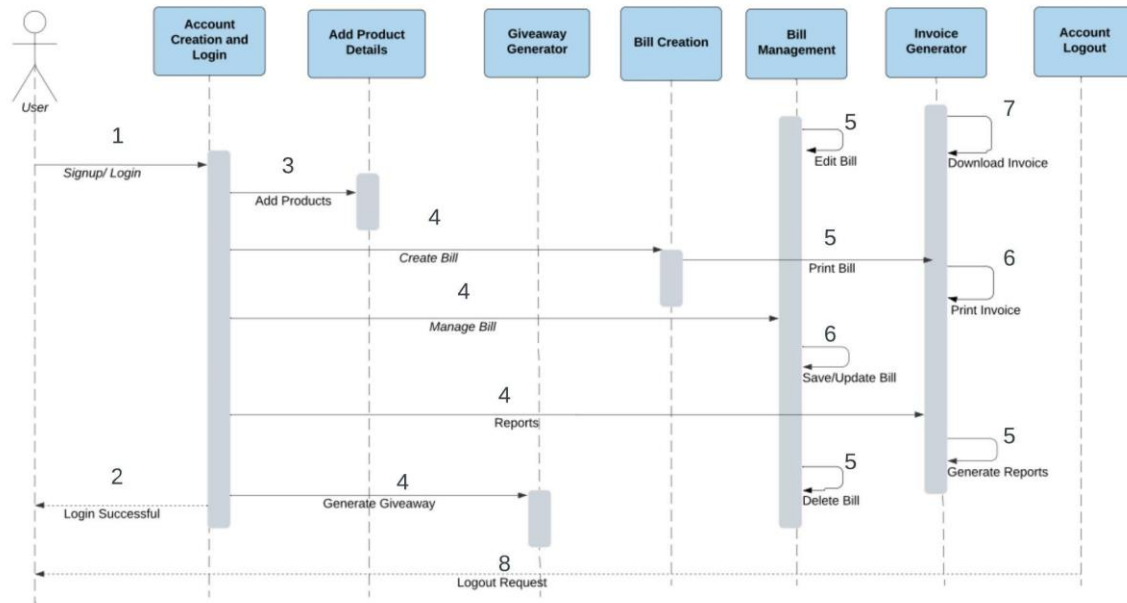+user_email : string

+generate()
+randomuser()

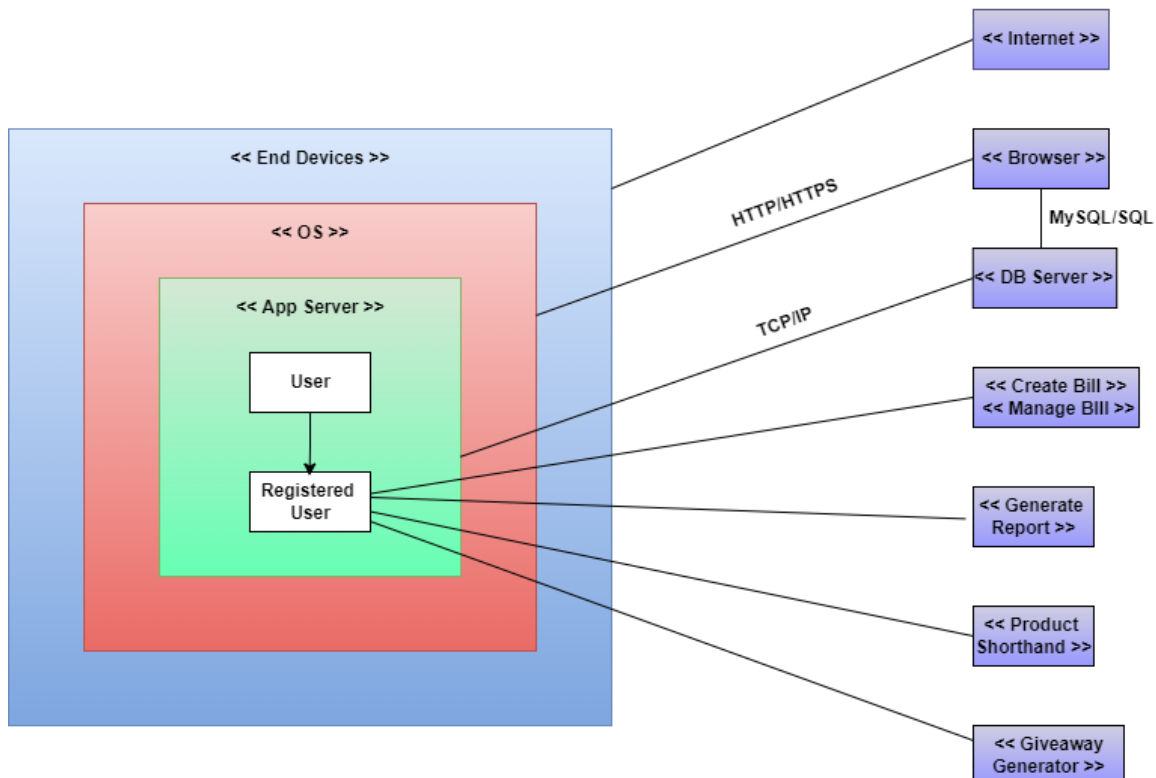Class Diagram

COLLABORATION DIAGRAM

SEQUENCE DIAGRAM

Sequence Diagram

DEPLOYMENT DIAGRAM

CONCLUSION

Since the prior method was manual, it necessitated a lot of paperwork and made it impossible to keep track of all previous sales, products, and stock. The system will provide the benefit of keeping track of all sales and stock at any given moment, reducing paperwork and, as a result, errors. Here's where our app comes in, since it will make the process of keeping track of purchases a lot easier. Currently, it involves a lot of paperwork, which takes time and is prone to error. With a new system, work could be done much faster and more accurately.

THANK YOU